

22879



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/301,885	04/29/1999	DARRELL R. COMMANDER	1857-00200	6193

22879 7590 12/22/2004

HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

ALI, SYED J

ART UNIT PAPER NUMBER

2127

DATE MAILED: 12/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/301,885	COMMANDER, DARRELL R.	
	Examiner	Art Unit	
	Syed J Ali	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2004.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 27-30 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☒ Claim(s) 24,27 and 28 is/are allowed.  
 6) ☒ Claim(s) 1-4,6,7,9-13,15-17,20-23,29 and 30 is/are rejected.  
 7) ☒ Claim(s) 5,8,14,18 and 19 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 30 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All    b) ☐ Some \*    c) ☐ None of:  
     1. ☐ Certified copies of the priority documents have been received.  
     2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. This office action is in response to the amendment September 1, 2004. Claims 1-24 and 27-30 are presented for examination.
2. The text of those sections of Title 35, U.S. code not included in this office action can be found in a prior office action.

### ***Claim Rejections - 35 USC § 103***

3. **Claims 1-3, 7, 9-11, 13, 15, 20-23, and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shan et al. (USPN 5,325,525) (hereinafter Shan) in view of Williams (USPN 6,411,982).**
4. As per claims 1-3 and 7, Shan teaches the invention as claimed, including a parallel processing network (Abstract lines 1-2) in which one or more processes can be spawned, comprising:  
  
a plurality of computers coupled together by a communications link including a switch (col. 1 line 37 - col. 2 line 2); and  
  
process spawning logic included in one of said plurality of computers that automatically spawns processes and determines whether sufficient processors are available to spawn the processes and, if not, spawns a reduced number of processes based on the number of available processors (Abstract lines 10-14; Fig. 1 elements 19, 25, 27, and 28; col. 3 lines 25-40; col. 5 lines 41-63; Claims 1 and 10).

Art Unit: 2127

5. Williams teaches the invention as claimed, including the processes being spawned in response to user specified criteria that controls how the processes are to be spawned by specifying a number of processes the spawning logic should spawn and a resource parameter (col. 6 lines 58-65).

6. It would have been obvious to one of ordinary skill in the art to combine Shan and Williams since capping the number of concurrently executing processes allows a network system or parallel processing system to make most efficient use of its resources. Having an excess number of processes would slow the system down significantly, so a method of aligning the number of processes to the available resources is greatly beneficial (Williams, col. 1 lines 32-40).

7. As per claims 9-10, Shan teaches the invention as claimed, wherein said process spawning logic compares the user specified criteria to network features that are maintained in a process scheduler included in one of said plurality of computers (col. 4 line 63 - col. 5 line 32).

8. As per claims 11 and 13, Shan teaches the invention as claimed, wherein each of said plurality of computers includes a network interface resource (col. 1 line 37 - col. 2 line 2) and wherein the network features include an identification of which of said plurality of computers is operational, which are nonoperational, the spawning logic, and the type of network interface resource (col. 4 line 63 - col. 5 line 32).

Art Unit: 2127

9. As per claim 15, Shan teaches the invention as claimed, including a parallel processing network, comprising:

a plurality of processors coupled together by a communications link (col. 1 line 37 - col. 2 line 2);

a process scheduler accessible by at least one of said processors, said process scheduler maintains a list of network features (col. 4 line 63 - col. 5 line 32);

spawning logic coupled to said process scheduler, said spawning logic receives a set of parameters that determine how processes are to be spawned by the root machine, the set of parameters including a user desired number of processes to be spawned, said spawning logic determines whether a sufficient number of processors are available to permit the desired number of processes to be spawned in accordance with the parameters and, if not, spawns a reduced number of processes based on the number of available processors (Abstract lines 10-14; Fig. 1 elements 19, 25, 27, and 28; col. 3 lines 25-40; col. 5 lines 41-63; Claims 1 and 10).

10. Williams teaches the invention as claimed, including the set of parameters being specified by a user and controlling how processes are to be spawned (col. 6 lines 58-65).

11. As per claims 20-21, Shan teaches the invention as claimed, including a computer readable storage medium for storing an executable set of software instructions which, when inserted into a host computer system, is capable of controlling the operation of the host computer, said software instructions being operable to automatically spawn parallel processes in a parallel processing network, comprising:

Art Unit: 2127

a means for reading a process scheduler to access a list of features associated with the parallel processing network (col. 4 line 63 - col. 5 line 32);

a means for comparing the list of network features to specified criteria (col. 4 line 63 - col. 5 line 32); and

a means for spawning a number of processes that spawns the user desired number of processes if said means for comparing determines that the parallel processing network has sufficient features in accordance with the specified criteria (Abstract lines 10-14; Fig. 1 elements 19, 25, 27, and 28; col. 3 lines 25-40; col. 5 lines 41-63; Claims 1 and 10) and otherwise spawns a reduced number of processes based on the number of available CPUs (Abstract lines 10-14; Fig. 1 elements 19, 25, 27, and 28; col. 3 lines 25-40; col. 5 lines 41-63; Claims 1 and 10).

12. Williams teaches the invention as claimed, including a means for receiving user specified criteria that control how processes are to be spawned by specifying a desired number of processes to be spawned (col. 6 lines 58-65).

13. As per claims 22-23, Shan teaches the invention as claimed, wherein said means for spawning processes includes spawning fewer than the user desired number of processes if said means for comparing determines that the parallel processing network has insufficient CPUs in accordance with the user specified criteria (Abstract lines 10-14; Fig. 1 elements 19, 25, 27, and 28; col. 3 lines 25-40; col. 5 lines 41-63; Claims 1 and 10).

14. As per claims 29-30, Shan teaches the invention as claimed, including a method for spawning processes in a multiprocessor network, comprising:

specifying whether processes are to be spawned in accordance with a process file group (col. 7 lines 29-67);

spawning processes in accordance with the process group file if so specified (col. 3 lines 25-40; col. 5 lines 41-63; col. 7 lines 29-67); and

spawning a reduced number of processes in accordance with the process group file based on a number of available processors (Abstract lines 10-14; Fig. 1 elements 19, 25, 27, and 28; col. 3 lines 25-40; col. 5 lines 41-63; Claims 1 and 10).

15. Williams teaches the invention as claimed, including automatically spawning processes if the set of parameters are specified by a user and control how processes are to be spawned (col. 6 lines 58-65); and

determining whether the multiprocessor network matches the set of criteria if automatic spawning is specified (col. 1 lines 32-40; col. 6 lines 58-65).

16. **Claims 4, 6, 12, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shan in view of Williams in view of Billups, III (USPN 6,173,246) (hereinafter Billups).**

17. As per claim 4, Billups teaches the invention as claimed, including the parallel processing network of claim 3 wherein the user specified criteria also includes a model parameter (col. 9 lines 40-55).

18. It would have been obvious to one of ordinary skill in the art to combine Shan and Williams with Billups since Billups provides the added benefit of allowing a CPU type to be

Art Unit: 2127

specified. This feature allows the parallel processing network to ensure that processes being spawned are spawned in accordance with CPUs that they are capable of executing on. For instance, if a process is spawned that can only be run on a specific type of machine, spawning a process to an incompatible machine would be useless. By indicating the CPU type, a predetermination can be made as to whether or not the process will execute properly.

19. As per claims 6 and 12, Billups teaches the invention as claimed, including the parallel processing network of claim 4 wherein each of the plurality of computers includes a CPU and the network features include a model parameter that refers to the type of CPU (col. 9 lines 40-55).

20. As per claims 16-17, Billups teaches the invention as claimed, including the parallel processing network of claim 15 wherein the user parameters include a particular type of network resource (col. 1 line 37 - col. 2 line 2; col.4 line 63 - col. 5 line 32) such as a particular model of processor to which the processes are to be spawned (col. 9 lines 40-55).

***Allowable Subject Matter***

21. **Claims 24 and 27-28 are allowed.**

22. **Claims 5, 8, 14, and 18-19 are objected to as being dependent upon rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claims and any intervening claims.**



***Response to Arguments***

23. Applicant's arguments filed September 1, 2004 with respect to claims 29-30 have been fully considered but they are not persuasive. Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new grounds of rejection.

24. Applicant argues on page 9, "*Applicant does not find any teaching or even a suggestion in this passage of Shan, or elsewhere in Shan, of the ability to spawn processes 'automatically to match a set of criteria or ...in accordance with a process group file.' "*

25. Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. It is noted that Shan does not explicitly use the term "process group file". Examiner's understanding of a "process group file" is a file that specifies the spawning criteria in the event that user specified criteria is not available. This is the same objective achieved by the formal parameters disclosed by Shan that define the multiprocessor computer system. Shan discloses a set of parameters that indicate the degree of concurrency and the maximum number of available resources, among others. These parameters tell the system how to go about distributing tasks and subtasks among the available resources.

***Conclusion***

26. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed J Ali whose telephone number is (571) 272-3769. The examiner can normally be reached on Mon-Fri 8-5:30, 2nd Friday off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai T An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2127

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Syed Ali  
December 15, 2004



MENG-AL T. AN  
ASSISTANT PATENT EXAMINER  
EBC CENTER 2100